Original Article

Trend of modern contraceptive uptake and its predictors among women accessing family planning service in a tertiary hospital in Northwestern Nigeria, 2000-2014

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ABSTRACT

Background: Client preference and availability of contraceptives are important determinants of uptake in developing countries. In this study, we investigated the trend of contraceptive uptake and factors associated with client choice among women accessing family planning services in an urban tertiary hospital in Northwestern Nigeria.

Subjects and Methods: Time-trend analysis was performed on registry data of contraceptives dispensed between January 2000 and December 2014 at the family planning unit of Barau Dikko Specialist Hospital, Kaduna, Northwestern Nigeria. Five-year periods (2000–2004, 2005–2009, and 2010–2014) were identified, and the prevalence of contraceptive methods for each period is expressed as moving averages. Predictors of client choice were determined by logistic regression expressed as odds ratio [OR] (95% confidence interval [CI]).

Results: A total of 5992 family planning consultations were made during the 15-year study period. Compared with the intermediate 5 years, there was a rise from 1723 (2000 to 2004) to 2128 (2005–2009) and a decline in the final 5 years to 1912 (2010–2014). Cumulatively, the most preferred contraceptive was injectables (40.7%). Women aged $\geq$35 years showed significant positive association with contraceptive uptake (OR 2.243, 95% CI = 1.489–3.380; $P < 0.05$) for injectables (OR 13.609, 95% CI = 6.317–29.318 and OR = 0.019, 95% CI = 0.012–0.030; $P < 0.05$) for oral contraceptive pills. Women who had completed secondary school or more had greater odds of using intrauterine contraceptive device or implants, OR 2.278, 95% CI = 1.869–2.776, $P < 0.05$ and OR 5.012, 95% CI = 2.346–10.79, $P < 0.05$, respectively.

Conclusion: Injectable contraceptive was the most common method used. Women's age and educational attainment were the major factors influencing choice and uptake of modern contraceptives.

Key words: Choice; modern contraceptive; Nigeria; tertiary hospital; uptake.

Introduction

Effective contraceptive use reduces the frequency of unintended pregnancies associated with induced abortions and proportion of high-risk pregnancies, thereby improving maternal and child health.[1] Studies have estimated that 30%–40% of maternal deaths,[2,3] and 90% of induced

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abortion-related maternal deaths[4] could be averted if all women who desired to use, had access to contraceptives. In addition, contraception significantly contributes to lessening neonatal, infant, and under-five mortality.[5] It is estimated that in developing countries as many as 1.8 million child deaths could be averted if all pregnancies were spaced by at least 3 years.[6]

In the past three decades, investments in family planning programs have raised the level of contraceptive usage from 19% to 62% in the developing world, and this contributed to an estimated 75% decline in fertility.[7] Despite the increase in demand and supply of family planning services, gross inequities exist between and within countries in the use of contraceptives.[7] Thus, posing challenges to attainment of health system and family planning programming targets. In many developing countries, especially in Africa, the demand for contraceptives is still not being fulfilled.[8] Globally, in 2010, the unmet need for modern contraception was 12%, whereas it is 18% (estimated 222 million women) in developing countries with a much higher (30%–37%) need in many parts of Africa and Asia.[8-10] In particular, Nigeria, being the most populous African nation, is yet to derive significant benefits of family planning, as use of contraceptives among currently married women has remained lower than the African average,[11] Consequently, the high fertility is considered an important contributor to high maternal mortality in the country.[12]

Nigeria's family planning program began in 1964, with the formation of the National Family Planning Council of Nigeria.[13] Over the decades, family planning programs were principally driven by the development partners and nongovernmental organizations with external funding.[14] Currently, family planning services are provided by public and private sectors with commodities provided free or subsidized in public sector facilities.[15] Despite improved availability of family planning methods, the contraceptive prevalence has not significantly increased mainly because of factors inhibiting access and lack of motivation to use contraceptives, as pronatalism sentiments are intense.[10] Across the different geopolitical regions of Nigeria, contraceptive prevalence ranges from 26% in Lagos State (Southwest) to <1% in Jigawa and Kano States (Northwest).[10]

The Northern part of Nigeria has one of the lowest rates of contraceptive use and second highest maternal mortality burden in the world.[10] This situation is mediated by sociocultural drivers of high fertility, which is accentuated by poor investment in strategic behavior change communication leading to low demand for family planning.[14] In addition, a number of supply-related factors limit contraceptive use.

These include erratic supply of modern contraceptives, gaps in logistics supply chain, donor dependence, poor-quality services, and dearth of skilled health personnel to provide family planning services.[16] Therefore, this study was conducted to determine the trend and predictors of contraceptive uptake among women accessing family planning at a tertiary health institution in Northwestern Nigeria.

Subjects and Methods

This study is based on service delivery data derived from service records of the family planning clinic of Barau Dikko Teaching Hospital, Kaduna, Kaduna State, Northwest, Nigeria (formerly Barau Dikko Specialist Hospital). This tertiary health facility serves as primary health care and referral facility for over a million people. The family planning clinic gets its clients from the postnatal clinic, general outpatient clinic, and general public. Since commencement of service delivery, a variety of contraceptive methods has been provided to clients that include barrier methods, spermicides, oral contraceptives, injectable contraceptives, implants, and intrauterine contraceptive device (IUCD).

At presentation in the family planning clinic, each client is counseled on the various methods, with emphasis on the benefits, side effects and contraindications of each, and allowed to choose an appropriate contraceptive method. A detailed health history is taken and thorough physical examination and appropriate investigations are done. The client is then given the chosen contraceptive and placed on appointment depending on the method used. At each return visit, all the complaints volunteered by the client are documented, and thereafter, she is clinically reassessed. A client was considered lost to follow-up if she defaulted more than twice from the scheduled visit. Clients who are pregnant or had contraindications to their chosen methods were excluded.

The case notes of all clients that received contraceptives at the family planning clinic of the Barau Dikko Specialist Hospital from January 1, 2000 to December 31, 2014 were retrieved and included in this study. The approval for the study was sought and obtained from the Kaduna State Ministry of Health. Descriptive analysis of the sociodemographic characteristics was done. Time-trend analysis was performed with time categorized as 5-year periods (2000–2004, 2005–2009, and 2010–2014), and the prevalence of contraceptive methods for each period expressed as moving averages, which addresses sudden changes. Evaluation of the predictors of client choice was also determined. Specifically, the association between age and education were tested by bivariate logistic regression

expressed as odds ratio [OR] (95% confidence interval [CI]). All the analyses were performed with SPSS version 21 (IBM, Armonk, NY, United States of America).

Results

Sociodemographic characteristics of the participants
There were a total of 5992 contraceptive users during the 15-year study period, giving a mean acceptor rate of 399.5/annum. Table 1 reveals the characteristics of the contraceptive users. The age range was between 18 and

51 years. Over two-thirds (69%) of the users were in the age group 20–34 years. One hundred and nineteen (2%) were <19-year-old, 29% were ≥35 years of age. There was marked increase in the frequency of contraceptive users with completed secondary or higher education (56%), whereas those with none and some primary education were 17.3%. Two thousand nine hundred and fifty-three of the participants (51.2%) were Muslims, whereas 2232 (36.3%) were Christians. Three thousand five hundred and eighty-four (62.1%) were multiparous, whereas 2093 (36.3%) were grand multiparous.

Child spacing was the most common indication for contraceptive usage in 75.4%, whereas 10.6% of the participants required family limitation and 6% were uncertain and needed further counseling. Many of the contraceptive users got information about family planning from health workers 3671 (63.7%), and through, the mass media comprising radio/television/print media 195 (3.4%). The remaining obtained information from friends and relatives 223 (3.9%). Of the total number of contraceptive users, 2469 (43%) were new users, whereas 2300 (39.9%) had used contraceptives before. The most preferred contraceptive was injectables, which was used by 2347 (40.7%), of the users, followed by IUCD, which was used by 2085 (36.2%) and combined oral contraceptive pills (OCPs) by 647 (11.3%). The least used method was implants (implanon/Jadelle) 118 (2.1%).

Trend of modern contraceptive uptake, 2000–2014
As shown in Figure 1, the IUCD was the most common method of family planning used in 2006 and 2011, respectively. In 2002, the injectables were the most common method; however, in 2008, there was no client using it as a method of family planning. The method gained popularity 4 years later with about 64% of clients using the method between 2012 and 2013. The OCP had its highest users of 34%, 45%, and 25% in 2004, 2008, and 2011, respectively. The implants have maintained a steady increase in the number of users' right from its introduction in 2012.

Predictors of modern contraceptive uptake
Association between contraceptive uptake with age and women's educational attainment is shown in Table 2. Women aged ≥35 years showed significant positive association with contraceptive uptake (OR 2.243, 95%CI = 1.489–3.380; $P < 0.05$) for injectables (OR 13.609, 95% CI = 6.317–29.318 and OR = 0.019, 95% CI = 0.012–0.030; $P < 0.05$ for OCPs. Women who had completed secondary school or more had greater odds of using IUCD or implants, OR 2.278, 95% CI = 1.869–2.776, $P < 0.05$ and OR 5.012, 95% CI = 2.346–10.79, $P < 0.05$, respectively.

Table 1: Sociodemographic and gynecological characteristics of the study participants

Variable	2000-2004 (*n*=1723), *n* (%)	2005-2009 (*n*=2128), *n* (%)	2010-2014 (*n*=1912), *n* (%)
Age (years)			
Mean (SD)	31.9 (8.38)	31.4 (7.97)	32.8 (8.88)
≤19	39 (2.3)	26 (1.2)	54 (2.8)
20-34	1198 (69.5)	1565 (73.5)	1209 (63.2)
≥35	486 (28.2)	537 (25.2)	649 (33.90)
Education			
None	235 (13.7)	227 (10.7)	123 (6.5)
Some primary	174 (10.1)	153 (7.2)	82 (4.3)
Primary completed	323 (18.8)	394 (18.6)	134 (7.1)
Some secondary	147 (8.5)	248 (11.7)	254 (13.4)
Secondary completed or more	841 (48.9)	1098 (51.8)	1299 (68.7)
Religion			
Christianity	666 (43.0)	707 (40.2)	859 (44.9)
Islam	882 (56.9)	1018 (57.9)	1053 (55.1)
Number of children alive			
1-2	495 (29.2)	592 (28.2)	688 (36.5)
3-4	376 (22.2)	845 (40.3)	588 (31.2)
>4	825 (48.6)	659 (31.4)	609 (32.3)
Desire for more children			
No	276 (16.1)	255 (15.0)	83 (4.3)
Yes but later	1438 (83.9)	1409 (83.0)	1500 (78.5)
Not certain or request counseling only	0	33 (1.9)	329 (17.2)
Source of information about family planning			
Health worker	1157 (88.7)	1066 (85.1)	1448 (94.6)
Mass media	74 (5.7)	44 (3.5)	77 (5.0)
Friend/relation	74 (5.7)	143 (11.4)	6 (0.4)
Contraceptive use before visit			
Yes	493 (40.9)	859 (51.0)	948 (50.2)
No	702 (58.3)	825 (49.0)	942 (49.8)
Contraceptive method selected during current visit			
OCP	212 (13.1)	188 (10.8)	249 (13.5)
Injectable	945 (58.6)	531 (30.4)	871 (47.3)
Implant/implanon	0	0	118 (6.4)
IUCD	457 (28.3)	1026 (58.8)	602 (32.7)

IUCD - Intrauterine contraceptive device; OCP - Oral contraceptive pill; *Missing variable not analysed
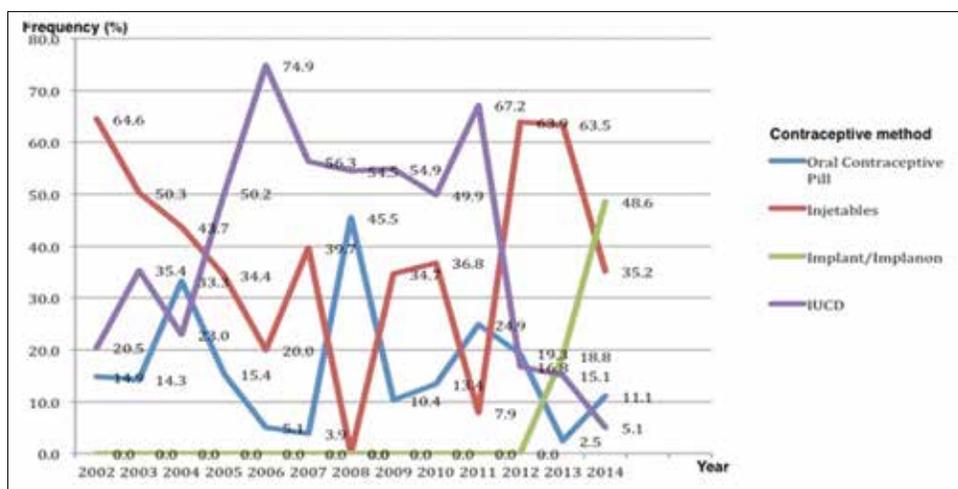
Figure 1: Trend of contraceptive method use 2000–2014

Table 2: Association between age and educational level and contraceptive method uptake: Results of regression analysis

Characteristic	Method, frequency (%), OR (95% CI)			
	OCP	Injectable	IUCD	Implant/implanon
Age (years)				
<19	74 (56.5), 52.3 (32.9-83.3) ^	39 (24.4), (reference)	7 (5.3), (reference)	8 (6.1), 5.4 (2.4-12.6) ^
20-34	558 (13.4), 6.2 (4.5.8.6) ^	1678 (40.30), 2.1 (1.4-3.1) ^	1353 (32.5), 8.5 (3.4-18.3) ^	195 (4.7), 4.1 (2.6-6.5) ^
>35	41 (2.4), (reference)	712 (42.0), 2.2 (1.5-3.4) ^	736 (43.4), 13.6 (6.3-29.3) ^	20 (1.2), (reference)
Education				
None	65 (10.9), (reference)	305 (51.3), 2.0 (1.7-2.4) ^	148 (24.9), (reference)	7 (1.2), (reference)
Some primary	38 (9.3), 0.8 (0.5-1.3)	180 (44.0), 1.5 (1.2-1.9) ^	120 (29.3), 1.3 (0.9-1.7)	0
Completed primary	56 (6.5), 0.6 (0.4-0.8) ^	388 (45.1), 1.6 (1.4-1.8) ^	183 (21.3), 0.8 (0.6-1.0)	0
Some secondary	68 (9.9), 0.9 (0.6-1.3)	387 (56.5), 1.6 (1.3-1.8) ^	151 (22.0), 0.9 (0.7-1.1)	24 (3.5), 3.1 (1.3-7.1) ^
Completed secondary and more	446 (13.1), 1.2 (0.9-1.6)	1163 (34.1), (reference)	1466 (43.0), 2.3 (1.9-2.8) ^	192 (5.6), 5.0 (2.3-10.7) ^

^$P<0.05$. OCP - Oral contraceptive pill; IUCD - Intra uterine contraceptive device; OR - Odds ratio; CI - Confidence interval

Discussion

This study was conducted to investigate the time trend and predictors of contraceptive uptake at the family planning unit of a tertiary health facility in a major population center of Northwestern Nigeria. Overall, the injectables were the most preferred method over the study period. It was the most common method in 2002 with about 65% of clients using it. There was a gradual decline in its use with only 20% of women using it by 2006. However, a rise in its use occurred with a peak in 2007, followed by a sharp decline with no user in 2008. Another rise and double plateau was noted in 2010 and 2012, and by 2014, it was the second most popular method with 35%. The IUCD was the most common method of family planning used in 2006 and 2011, respectively. There was a sharp decline in its use resulting in only 5.1% of clients using it in 2014. This changing trend may be as a result of the erroneous beliefs that IUCD can cause cervical and endometrial cancer,[17] and the fear that it might reduce their husbands' sexual satisfaction. This is in contrast to the implants, another long-acting method that maintained a steady increase in the number of users' right

from its introduction in 2012, and was the most popular method in 2014 with about 49% of clients preferring it. This may be due to its high efficacy, dosing schedule, lack of partner involvement, and ease of reversibility associated with contraceptive implants. The OCP had its highest users of 34%, 45%, and 25% in 2004, 2008, and 2011, respectively. Women aged ≥35 years showed significant positive association with contraceptive uptake. Likewise, women who had completed secondary school or more had greater odds of using IUCD or implants (long-acting reversible contraceptives). This was similar to finding in Angola.[18]

We found an acceptance rate of 399.5/annum in this study, which is considerably higher than 167.8/annum reported in Sokoto,[19] and lower than 453.8/annum reported in the South-South.[20] This rather low patronage rate may be due to the fact that family planning is still a contentious issue in our environment because of traditional and cultural beliefs.[21]

In this study, women aged ≥35 years were more likely to use modern contraceptive methods than other age group.

This is a reflection of the need for family planning during the active reproductive years. This is consistent with the Ethiopian study.[22] The predominance of Muslims in this study is a reflection of the religious affiliations of the inhabitants of Kaduna North the location of the hospital. Educational attainment was an important predictor of modern contraceptive use. In this study, women that had secondary education and above were more likely to use modern contraceptives than those with primary or less. This may be associated with the role of female education in empowering women through enhancing their autonomy and participation in decision-making, positively modifying health-seeking behavior, and building social capital through expansion of social networks.[1] This agrees with studies in Ethiopia, Tanzania, and Ghana.[23-25] Multiparous clients with 1–4 children formed the highest group that sought family planning services as they accounted for (62%) of the total number analyzed. When compared with other reasons for contraceptive use, a larger percentage of clients 75.4% wanted more children, yet needed to space their children. Only 10% indicated no desire for more children, whereas 6% were not decided at the time of clinic visits. This is similar to the Sokoto study,[18] and in contrast to the Aba study that showed majority indicated no desire for more children.[26]

The main sources of information on family planning in Nigeria are friends or siblings, media, formal education, and health workers.[14,15] The health personnel comprising of doctors and nurses/midwives, were the most important sources of information for these women, as 63.7% of the participants knew about family planning services through them. This was similar to other studies;[18,26] however, a study in women in rural Aba showed majority got their information on contraceptive method through friends.[26] The injectable hormonal contraceptive agents, medroxyprogesterone acetate (Depo-Provera), and norethisterone enanthate (Noristerat) were the most common form of contraceptive agents used accounting for 40.7%. This is similar to studies done in Aba, Port Harcourt, Ilorin, and Zaria.[19,27,28] This may be a national trend as corroborated by the National Demographic Health Survey.[10] The possibility of being able to avoid disclosure to male partners alongside reduced side effects may make injectables appealing to women.[21] This is different from the Sokoto study where IUCD (41.8%) was the most preferred method.[18] Acceptance of IUCD (36.2%) was high and similar to the findings of the Ilorin study.[26] The use of hormonal implants was low (2.1), and this most likely from its late introduction in the latter 3 years of the study. The method mix was poor as the injectables, and IUCD were the most popular methods of contraception during the review period.

The population of 5992 clients over a 15-year period is small; this is a pointer to the low contraceptive prevalence rate and a high fertility rate[10] with its attendant consequences. Another concern for worry is the preference of long-acting reversible contraception by more educated women as varied from short-acting reversible contraception preferred by low educated women; this could be as a result of supply-related factors limiting contraceptive use. The variation in use of different methods could also be as a result of supply related to specific periods of time. This could explain decreased use of injectables and indeed no use whatsoever in 2008. It explains the absence of implants early in the study. These factors include erratic supply of modern contraceptives, gaps in logistics supply chain, donor dependence, poor-quality services, and dearth of skilled health personnel to provide family planning services.[16]

One of the strengths of this study is a large sample and trend data about the characteristics of family planning users was obtained. However, a limitation is the poorly kept supply records, which is a well-known challenge of health information management systems.

Conclusion

Client's age and educational attainment were important determinants of contraceptive usage in this study. Hormonal injectable was the most common method in the family planning clinic of Barau Dikko Specialist Hospital. A substantial number obtained information about family planning from health personnel. The uptake of family planning services at Kaduna is low; therefore, concerted efforts should be made to improve utilization of these services through public enlightenment by use of mass media, on the benefits of family planning.

Conflicts of interest
There are no conflicts of interest.

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